Transportation Needs Exceed Funding

PRELIMINARY DRAFT FOR DISCUSSION ONLY

This preliminary draft discussion paper is a work product developed by the consulting team for review and discussion by the Blue Ribbon Commission on Transportation. The contents are intended to provide the Commission members with factual background information and a balanced set of policy alternatives, including the pros and cons of these alternatives. This paper is one of a series and should be reviewed in the context of the entire series that, when taken together, presents a comprehensive overview of the state's transportation system.

This discussion paper has been prepared primarily for Blue Ribbon Commission members new to these issues who wish to engage in a fundamental debate and for a more general audience of interested citizens who may wish to comment on the Commission's deliberations. This paper is intended to be provocative and to stimulate discussion of issues and options in this state. It questions the current ways of doing business, not for the sake of finding fault, but to allow consideration of other potential ways of thinking about transportation issues that might be appropriate in the future.

PROBLEM STATEMENT AND OVERVIEW

In Washington state, the state and local governments spend close to $4 billion annually providing roads, ferries, and transit services. Despite this level of spending, all levels of government have identified transportation needs far in excess of their existing and projected levels of funding. According to the Washington State Department of Transportation's most recent state transportation plan, Washington has more than $50 billion in unfunded transportation needs over the next 20 years. To fund these needs would require doubling current levels of public spending on transportation. The current update of the state transportation plan will likely show even higher levels of needed investments in streets, roads, highways, transit, ferries, and freight mobility.

While many people believe government should improve the maintenance of the road system and make road and transit investments to relieve congestion, less support exists for the increases in taxes and fees necessary to fund major increases in transportation spending. In addition, some are skeptical as to whether all the identified "needs" represent cost-effective investments. Jurisdictions do not share common definitions of needs and service objectives. Since few "needs" have undergone rigorous analyses of their cost-effectiveness, it is difficult to know whether substantial increases in public spending would generate benefits in excess of their costs.

This paper describes how state and local governments determine transportation needs; reviews current estimates of the level of need at the state, regional, and local level; and discusses some potential solutions to closing the gap between needs and funding. While addressing the funding issue in a broad sense, this paper focuses on the needs side of the equation. Readers interested in learning more about

the current funding system are encouraged to read a separate issue paper prepared for the Blue Ribbon Commission entitled "Overview of Transportation Funding."

DETERMINING TRANSPORTATION NEEDS

Each jurisdiction – including the state, counties, cities, and transit districts – has the ultimate responsibility for identifying the resources it needs to fulfill its mandate to provide transportation services. Since identified needs exceed the amount of revenue authorized under current law, those agencies work with elected officials and ultimately the public to determine the amount of funding they should receive. The responsibility for identifying and quantifying needs rests with the more than 450 jurisdictions in the state that provide facilities for moving people and goods. Current estimates of statewide transportation needs, therefore, primarily reflect the summation of the preferences and priorities of many different jurisdictions. Over the last decade, the Washington State Department of Transportation and the state's 14 Regional Transportation Planning Organizations have worked to develop coordinated plans and assessments of needs that reflect the integrated nature of our transportation system. Through the current update of the state's transportation plan, these jurisdictions have continued to integrate their needs with system-wide priorities.

Keeping responsibility for the assessment of transportation needs and funding at the local level holds an obvious logic. Elected officials and staff in local government and agencies know their communities, and they know what investments will address the interests of their community. However, as each jurisdiction develops its own approach for identifying needs and then advocates for its particular projects at the state level, it becomes difficult to determine which projects or needs are the best. No consistent metric exists for comparing the return on public investments for each category of need.

Given the problems of congestion and inadequate maintenance of some existing transportation facilities such as local roads, strong evidence suggests that transportation agencies cannot maintain or improve service levels with their current resources. Nonetheless, from a statewide perspective, the processes and techniques for determining needs do not facilitate setting priorities for different modes and jurisdictions.

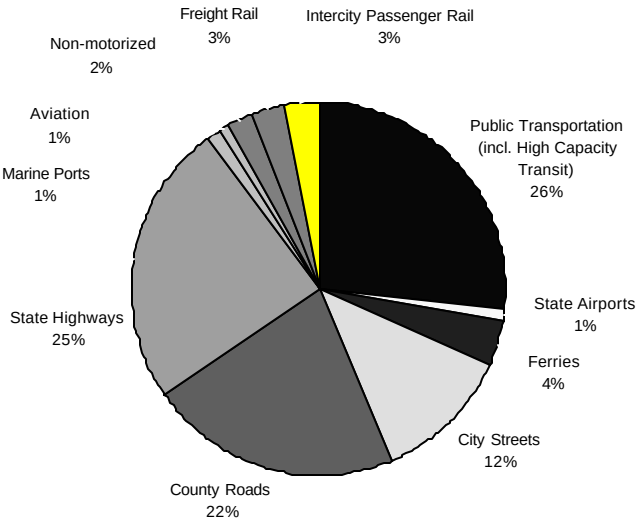
CURRENT ESTIMATES OF NEED

Washington's Transportation Plan 1997-2016

In response to state and federal requirements, in 1996 the Washington State Transportation Commission developed *Washington's Transportation Plan 1997-2016* to provide a 20-year vision for all transportation modes that are owned by or of interest to the state. More than a state highway plan, the WTP addresses all of Washington's transportation needs by travel mode: public transportation (including high-capacity transit), state highways, city streets, county roads, ferries, marine ports, aviation, non-motorized transportation, freight rail, and intercity passenger rail.

To develop the plan, the state worked with the relevant jurisdictions to identify the resources they need to meet their service objectives, including providing adequate maintenance and capacity additions to reduce congestion. This first estimate of total statewide transportation needs for 20 years was $104 billion. The following pie chart (Figure 1) shows the allocation of funds by major category.

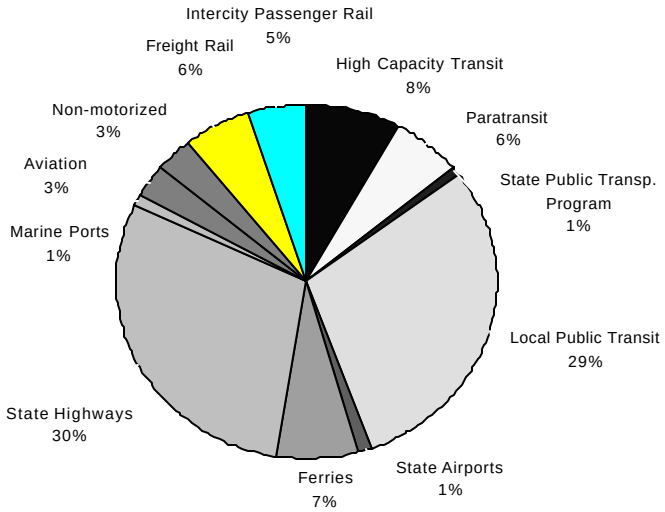
Figure 1. Total State Needs Identified in 1996 *Washington's Transportation Plan 1997-2016*.



20-year costs: $103.9 billion (1995 dollars)

To meet all of these needs would require public funding for transportation to more than double. The Washington State Transportation Commission questioned the political feasibility of such sizeable increases in funding, so the Commission developed a financially constrained plan. The constrained plan totaled $57 billion over the 20-year planning period. The allocations among transportation modes in the constrained plan are shown in Figure 2 below.

Figure 2. Financially Constrained Plan in 1996 *Washington's Transportation Plan 1997-2016*.

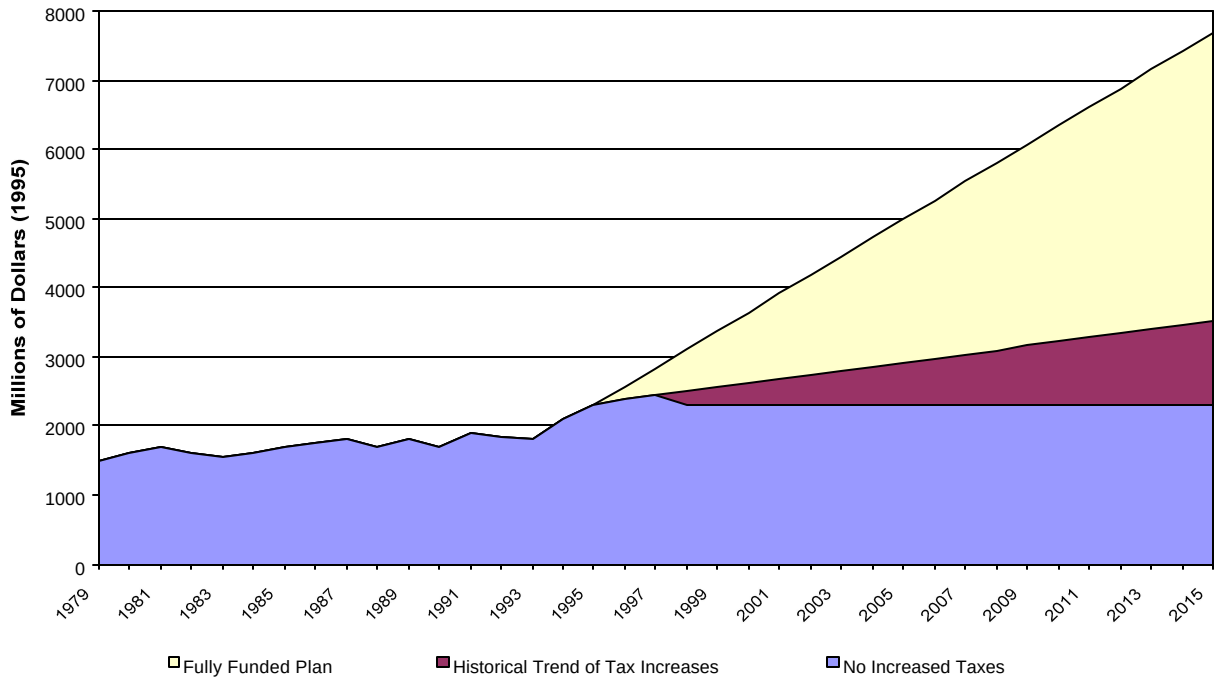


20-year costs: $56.9 billion (1995 dollars)

It is important to understand that the proposed funding in the state's transportation plan ($56.9 billion in 1995 dollars) was half of that amount identified as necessary to meet the service objectives of the system ($103.9 billion). Moreover, the "financially constrained" plan assumes that transportation funding will continue to get the type of increases it has received historically, including increases in the gas tax.

The following chart (Figure 3) shows annual spending on state transportation since 1979 and includes three alternative patterns of future spending. The lowest level assumes no increased taxes; the middle forecast continues the historical trend of tax increases; and the highest level is the fully funded plan to meet all service objectives. The current Washington Transportation Plan uses the middle forecast, based on the historical trend of tax increases, as the revenue constraint on the plan.

Figure 3. Historic and Potential State Spending on Transportation.



State Highway System Plan

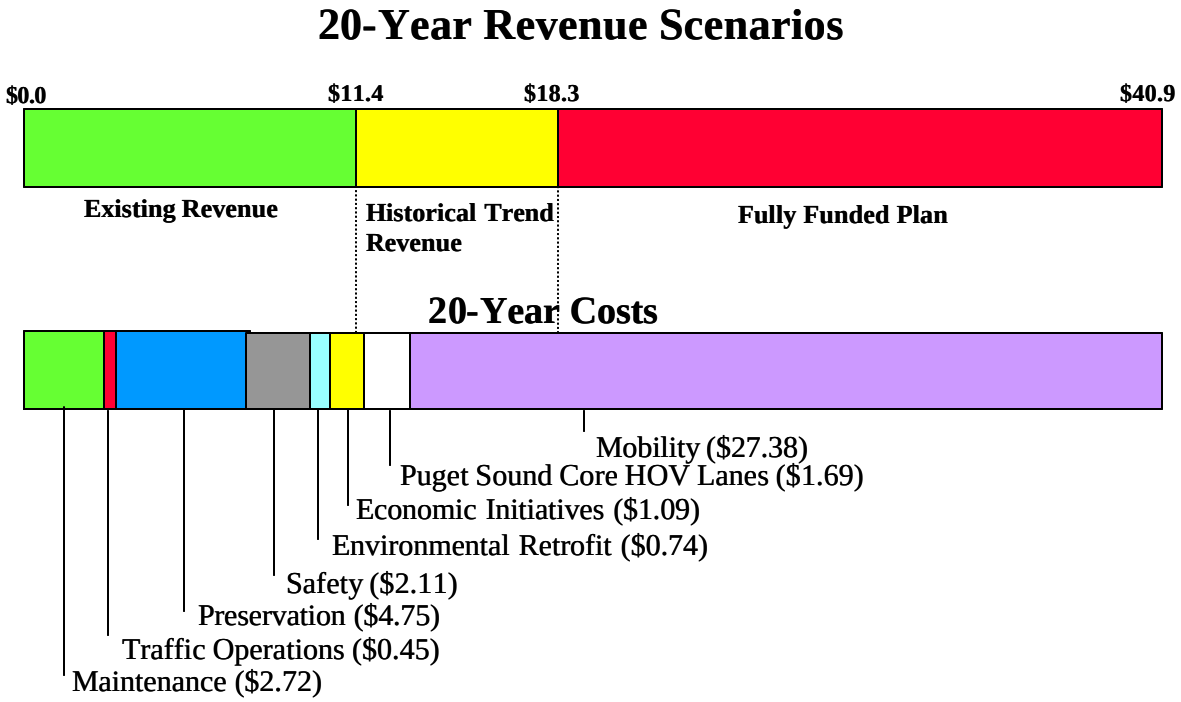
The State Highway System plan is one element of *Washington's Transportation Plan* for state-owned highways. The plan defines service objectives; action strategies; and costs to maintain, operate, preserve, and improve the state highway system for the next 20 years. As with the overall transportation plan, the highway plan was constrained to fit within the projected historical trend of revenues, totaling $18.3 billion. To keep within these financial constraints, the Commission made the following decisions on funding priorities, based on an extensive public review process.

1. Maintenance, Traffic Operations, and Preservation activities are top priorities. Total costs to fund these programs fully are included in the constrained plan.

2. Highway Safety, Environmental Retrofit, Economic Initiatives, and a Puget Sound core system of High-Occupancy Vehicle (HOV) lanes are high priorities. Total costs to fund these programs fully are included within the constrained plan in most cases.
3. Revenues remaining after the above priorities have been addressed will go to additions to highway capacity (mobility improvements).

The cost of these highway priorities relative to potential revenues appears below in Figure 4.

Figure 4. Highway Needs vs. Revenues (in billions of 1997 dollars).



Local Government Infrastructure Study

Elected officials and planners recognized that the Washington Transportation Plan's estimates of transportation needs for local jurisdictions were much less well developed than the figures for state-owned facilities. Many local governments do not have sufficient planning capacity to undertake a long-term transportation plan, as they are often more focused on day-to-day needs.

In fact, on a statewide basis, cities and counties have shown a limited ability to project transportation "needs" numbers beyond a few years. Most city and county "needs" numbers are based on their capital facilities plans, which are six-year projections. The plans are normally "constrained," as required by the Growth Management Act, meaning that they list only those transportation needs that can be paid for with projected estimated revenues over the six-year period. While some individual cities and counties may have 20-year needs information, presently there is no collection of statewide needs for cities and counties beyond the six-year timeframe. Furthermore, it is debatable how reliable a long-term

figure for local government "needs" would be, given the expected changes in city councils and county commissions and a fluctuating economy. The most recent effort to estimate long-term transportation needs of local governments was the 1987 Road Jurisdiction Commission Study (RJC), prepared by consultants, which projected needs for the ensuing 14 years. An updated RJC is now being undertaken by the Legislature.

In 1998, the Washington State Legislature commissioned a study of the infrastructure needs of local governments, including their requirements for roads and bridges.[1] Based on a sample of the capital facility plans for Washington cities and counties, this study estimated that the six-year funding needs for roads and bridges total $4.1 billion. Projected over 20 years, the projected need equals $13.7 billion, which represents about 40 percent of the total identified in the Washington Transportation Plan. These estimates reflect the capital facilities planning processes undertaken by each jurisdiction, and the figures vary considerably in their level of detail and the procedures used to identify the capital needs for roads. Nonetheless, the disparity between the two numbers highlights the difficulty that policymakers confront in trying to determine the transportation needs of local governments.

REGIONAL NEEDS

As the largest metropolitan area in the state and the one most plagued by urban congestion, the Puget Sound region has developed its own assessment of transportation needs. The Puget Sound Regional Council, in coordination with the state and local governments in the region, developed a long-range plan for the area known as the Metropolitan Transportation Plan. Other metropolitan regions of the state, including Spokane and Vancouver, also have regional plans and priorities. This paper focuses on the Puget Sound area to provide an example of regional needs and because it represents approximately 40 percent of the state need.

1995 Metropolitan Transportation Plan for Puget Sound Region

The Metropolitan Transportation Plan (MTP) is the long-range plan for future transportation investments in the central Puget Sound region. It recommends short-term and long-term activities to address transportation problems in the region by building on city, county, and transit agency plans; countywide planning policies; and the *Washington's Transportation Plan*. This document is updated every three years to encourage collaborative partnerships with transportation system users, including local jurisdictions, environmental organizations, freight and goods transporters, citizen groups, and other public and private organizations

According to the MTP, the central Puget Sound region invested $1.4 billion annually in the early 1990s. This funding helped maintain a transportation system consisting of 16,000 miles of roads; more than 2,000 public transit buses serving 90 park-and-ride lots and 27 transit centers; and a fleet of more than a dozen ferries serving 13 terminals. This figure does not include the investments that private individuals make in transportation expenditures, which account for many times more than the $500 per person in public expenditures.

[1] *State of Washington Local Government Infrastructure Study, Final Report*, June 1999, Moss Adams LLP.

The MTP identifies more than $58 billion in program needs shown on the following table (Figure 5). The MTP projects revenues of $36 billion under current law for the 20-year planning period, leaving $22 billion in unfunded needs.

Figure 5. Metropolitan Transportation Plan of 20-Year Program Needs in Puget Sound Region.

Program Area	Source	Estimated Total Needs (1994 $M)
State Highways	State Multimodal Transportation Plan: Sum of relevant initiatives	11,600
Public Transit *(Existing)*	Assumed growth in 1992 service levels and local transit agency plans	13,700
Public Transit *(New Regional High Capacity Transit)*		12,200
State Ferries	State Multimodal Transportation Plan, WSDOT Marine Division	3,800
County Roads	Extended 1992 base, plus additional funding for widened/new minor arterials	7,500
City Streets	Extended 1992 base, plus additional funding for widened/new minor arterials	7,400
Exclusive Freight & Goods	MTP technical papers, State Multimodal Transportation Plan, port capital programs	600
Nonmotorized	MTP technical papers, local non-motorized plans	1,500
	Total	**± $58,000**

PROBLEMS WITH ESTIMATES OF NEED

As noted earlier, each jurisdiction in the state is responsible for developing its own estimate of needs through its own planning and budgeting processes. Local control enables governments to be responsive to their citizens and local concerns, but it can also lead to inconsistency across jurisdictions. From a broad perspective, no ready mechanism exists to enables state-level policymakers to choose among many different competing needs. All needs are real, and they all have local supporters.

According to presentations to the Investment Strategies Committee, the analytic tools for measuring costs and benefits are not used consistently across jurisdictions. Few "needs" have been subject to rigorous analyses of their cost-effectiveness. While benefit-cost analysis is used in certain components of the system, it does not extend to all modes or to all levels of government. For example, WSDOT uses benefit-cost techniques to set priorities for highway investments but not for other modes, such as transit, ferries, or programs to influence travel demand. Moreover, the state's method for setting highway priorities counts only state dollars in the cost column and counts benefits only on state roads on the benefits side. A project with a low benefit-cost ratio can move up the list if other local governments contribute their own funding. While this approach encourages multiple jurisdictions to participate in state projects, it also means that investments that will yield a higher total return to the state's residents

can be delayed if a project with a lower benefit-cost ratio can attract money from more than one source.[2]

Finally, the current practice of dedicating funding to a particular type of use provides an incentive for jurisdictions to identify a long list of potential projects. Cities and counties have an incentive to find projects that qualify for any dedicated source. To maximize the number of projects that could qualify for funding from the state or federal government, local governments develop lists of projects that might qualify at some future time.

While inconsistency exists in how agencies determine needs and set priorities, there remains considerable evidence that the funding needs are real. The disparity between the level of investment called for in the state and regional plans, and the amounts of available funding suggest that additional cost-effective investments are indeed warranted. Separate issue papers on congestion and road maintenance provide more detail about some potential investments.

OVERVIEW OF POTENTIAL SOLUTIONS

Several broad strategies could help close the gap between transportation needs and funding:

1. Increase funding.
2. Constrain plans to available resources.
3. Improve the process for identifying and funding the most cost-effective investments.
4. Strengthen the link between user fees and the actual costs of providing transportation services.
5. Consolidate planning and funding processes.

INCREASE FUNDING

A wide range of existing taxes and fees could help generate more revenue to fund transportation. These include the gas tax, the motor vehicle excise tax, the sales tax, the property tax, and license fees. Issue papers on these and other sources of funding have been prepared separately.[3] The merits of any particular funding source deserve extensive review and discussion beyond the scope of this paper. Nonetheless, to comprehend the magnitude of potential tax increase, it is instructive to examine the one tax most closely associated with transportation: the gas tax. To fund an additional $50 billion over the next 20 years to meet statewide service objectives identified in the WTP would require an increase in

[2] These procedures are described in *Mobility Programming Criteria and Evaluation Procedures, Final Report*, June 1998, Washington State Department of Transportation.

[3] See the following Blue Ribbon Commission issue papers: "Overview of Transportation Funding," "Local Sources in Funding City and County Transportation Needs," "The Distribution of Gas Tax to the State, Cities, and Counties," "Market Mechanisms & User Fees in Transportation," and "Non-Traditional Mechanisms in Funding Transportation."

the gas tax of approximately $0.80 per gallon.[4] Such a large increase in the gas tax is unprecedented in the United States.

CONSTRAIN PLANS TO AVAILABLE RESOURCES

The federal government currently requires WSDOT and metropolitan planning organizations such as the Puget Sound Regional Council to develop plans that can be implemented within their existing budgets and probable future funds. While requiring jurisdictions to "live within their current budget" is one approach to reducing the need, many people are unhappy with the level of congestion and poor quality of the transportation system that would result from maintaining current funding levels and investment practices.

APPLY CONSISTENT ANALYTIC PRACTICES

Every investment decision, whether in the public sector or the private sector, should attempt to maximize the excess of benefits over costs (net benefits). In the private sector, net benefits to firms are measured through profits (net revenues). Firms make decisions about the type and quantity of goods or services to produce based on their predictions of the products consumers will buy at a given price and the cost of producing those goods.

Accordingly, the optimization of private investment decisions is conducted primarily in the context of the profit measure. The public sector, however, certainly has other objectives beyond those stated in terms of net revenues. Possible benefits could include the decreased travel costs to commuters resulting from a new high-occupancy vehicle lane; decreased air pollution for people living and working near highways; or a feeling of stewardship enjoyed by some people when the government enacts policies to discourage sprawl and increase transit ridership.

Benefit-cost analysis is the general term that policy analysts use to refer to both a logical framework and the specific techniques for measuring and comparing all the significant benefits and costs of a public policy. In a narrow sense, some texts and critiques of benefit-cost refer to it primarily as a technique for calculating the net present value of a future stream of quantifiable, monetary, direct benefits and costs. In its fuller sense, though, it is a framework that helps analysts and decisionmakers identify and quantify all benefits and costs of a proposed action; avoid omitting or double-counting benefits or costs; determine how future benefits and costs should be valued today; and estimate how benefits and costs are distributed among different groups.

Any choice is evaluated in comparison with a "no action" alternative. If the no action alternative yields greater net benefits, then the best policy is to do nothing. Benefit-cost analysis recognizes that policy alternatives may make some people better off and others worse off, but the fundamental rule ensures that those benefiting from the change could at least theoretically compensate those who lose, leaving everyone better off. Whether those who lose from a policy actually receive compensation is part of the evaluation of equity impacts that policymakers must consider along with the evaluation of net social benefits.

[4] This figure is based on information from WSDOT that each $0.01 per gallon raises approximately $32 million each year. The actual tax necessary to fund the plan would depend on how the projects were sequenced and trends in vehicle use and fuel efficiency.

More widespread use of benefit-cost analysis by transportation planners and agencies could help sift the needs from the wants and give policymakers better information for making decisions. Benefit-cost analysis does not make decisions; policymakers still need to weigh those factors that cannot be reduced to a benefit-cost ratio. Local decisionmakers should consider issues of equity and community purpose and then use their judgment accordingly. But benefit-cost cost analysis can provide a framework for more consistent evaluation of all modes and potential investments.

EMPLOY USER VARIABLE USER CHARGES

Greater reliance on direct user fees for roads (tolls) and transit use (fares) could help close the gap between needs and funding. Setting user fees to cover the actual cost of providing transportation service on a specific facility helps reduce demand, generates revenue, and provides guidance on the best investments for the future. The logic behind full-cost user charges is similar to the logic underlying benefit-cost analysis. If a roadway or transit facility provides enough economic benefits to justify development, usually an efficient pricing structure exists that could capture these economic benefits and permit the facility to be largely self-financed. While this situation is not always the case, opportunities often exist in congested urban areas to employ pricing strategies to narrow the gap between supply and demand for space on crowded roadways.

Congestion pricing is a method of pricing and financing highways. It has its origin in the theory of peak-period pricing developed by economists. Congestion pricing is implemented with a system of variable tolls or other pricing techniques on some or all of the lanes within an urban area. The purpose of peak-period pricing is to assign costs properly to peak versus off-peak customers and, thereby, to ration efficiently those facilities that are prone to congestion. Economists recommend congestion pricing of roads for the same reason that private firms use peak-period pricing: to minimize the waste of economic resources.

Pricing strategies contrast with the current system of road finance, which mainly uses a flat per-gallon tax paid at the fuel pump. This system necessarily has the effect of under-pricing peak use, and overpricing off-peak use, at least in relative terms. Congestion pricing also contrasts with conventional highway and bridge toll pricing systems, which charge a flat fee throughout the day. To transmit information accurately about the actual costs of road use, road user fees per mile of travel should vary with traffic conditions, the type of roadway, and the type of vehicle. By the very nature of road pricing, the prices should be based on costs associated with roadway use, rather than some other measure of vehicular activity.

Other issue papers for the Commission have discussed pricing strategies in the context of both congestion and revenue (see “Congestion in Washington” and “Market Mechanisms and User Fees”). This paper also includes the discussion because it is particularly relevant to the issue of needs and funding. Pricing can affect both the needs and funding sides of the equation. By adjusting the demand for travel, pricing can limit the extent of new investments needed to reduce congestion and improve road conditions. Additionally, pricing can also raise revenue for funding needed transportation investments.

CONSOLIDATE PLANNING & FUNDING

The current system of governance and funding is fragmented among more than 450 different entities, which can make it difficult to identify, fund, and implement the most cost-effective transportation solutions. While state and regional governments have made major strides to improve coordination and

planning, opportunities remain to identify cost-effective investments and policies that cut across multiple jurisdictions. A separate issue background paper for the Commission on "Governance Structures" evaluates these issues and options in more detail.

CONCLUSION

The issue of transportation needs exceeding available funding is central to the work of the Blue Ribbon Commission on Transportation, and it integrates many of the topics the Commission is addressing. The proposed solutions to the problem are not mutually exclusive. Elements of each of these approaches could be part of a comprehensive plan for addressing Washington's transportation future.